Tobacco Use Consequences

Indicator RECOMMENDED	Deaths from Lung Cancer
Justification	Lung cancer results from long-term tobacco use, and is the most common form of cancer mortality in the U.S. Eighty to 90 percent of all lung cancer is attributable to cigarette smoking. In 1998, there were slightly more than 125,000 smoking-attributable lung cancer deaths.
Definition	Number of deaths from lung cancer per 1,000 population
Numerator	Resident deaths during a calendar year with ICD-9 codes of 162.2-169.9 or ICD-10 codes C34 as the underlying cause of death
Denominator	Total resident population for the same calendar year
Data Sources	Death certificate data from the National Center for Health Statistics Mortality Detail Files (numerator) and population estimates from the U.S. Bureau of the Census (denominator)
Frequency	Annual
Geographic Levels	National, State, and County
Demographic Categories	Age by Gender by Race/Ethnicity
Strengths	Readily available for many years in all states
Limitations	Death from lung cancer reflects long-term, chronic cigarette smoking, and lung cancer has a long latency period. Therefore, it may be many years before changes in smoking affect population mortality. The stability of this indicator is directly related to the size of the population in which these deaths occur. Therefore, this indicator may be unstable for less populated states and counties that have low numbers of annual deaths, especially when used for demographic subgroups. There also is variability in the procedures used within and across each state to determine cause of death.

Indicator RECOMMENDED	Deaths from COPD and Emphysema
Justification	Approximately 80 percent of chronic obstructive pulmonary (COPD) and emphysema disease deaths are attributable to smoking. In 1998, there were approximately 100,000 deaths due to smoking-related COPD and related respiratory diseases.
Definition	Number of deaths from COPD and emphysema per 1,000 population
Numerator	Resident deaths during a calendar year with ICD-9 codes of 490-491, 492, 496 or ICD-10 codes J40-J42, J43, J44, J47 as the underlying cause of death
Denominator	Total resident population for the same calendar year
Data Sources	Death certificate data from the National Center for Health Statistics Mortality Detail Files (numerator) and population estimates from the U.S. Bureau of the Census (denominator)
Frequency	Annual
Geographic Levels	National, State, and County
Demographic Categories	Age by Gender by Race/Ethnicity
Strengths	Readily available for many years in all states
Limitations	This indicator is only based on deaths; cases of morbidity from respiratory disease are not reflected in this indicator. Death from respiratory disease reflects long-term, chronic cigarette smoking; it may be many years before changes in smoking affect population mortality. The stability of this indicator is directly related to the size of the population in which these deaths occur. Therefore, this indicator may be unstable for less populated states and counties that have low numbers of annual deaths, especially when used for demographic subgroups. There also is variability in the procedures used within and across each state to determine cause of death.

Indicator *Recommended with Reservations*	Deaths from Cardiovascular Diseases
Justification	Cigarette smoking is considered the most preventable cause of cardiovascular disease. There were approximately 113,000 smoking-attributable cardiovascular disease deaths in 1998.
Definition	Number of deaths from cardiovascular disease per 1,000 population
Numerator	Resident deaths during a calendar year with ICD-9 codes of 390-398, 402, 404-405,410-414, 420-429, 429.2, 430-438 or ICD-10 codes I00-I09, I11, I13, I20-I51, I60-I69 as the underlying cause of death
Denominator	Total resident population for the same calendar year
Data Sources	Death certificate data from the National Center for Health Statistics Mortality Detail Files (numerator) and population estimates from the U.S. Bureau of the Census (denominator)
Frequency	Annual
Geographic Levels	National, State, and County
Demographic Categories	Age by Gender by Race/Ethnicity
Strengths	Readily available for many years in all states
Limitations	This indicator is only based on deaths; cases of morbidity from cardiovascular disease are not reflected in this indicator. Cardiovascular disease is not a single disease, but rather numerous diseases with different causes and risk factors. Cigarette smoking is one of many risk behaviors which may contribute to cardiovascular disease. The stability of this indicator is directly related to the size of the population in which these deaths occur. Therefore, this indicator may be unstable for less populated states and counties that have low numbers of annual deaths, especially when used for demographic subgroups. There also is variability in the procedures used within and across each state to determine cause of death.

Tobacco Use Consumption

Indicator RECOMMENDED	Current Cigarette Smoking by Persons Aged 12 and Older
Justification	More than 400,000 deaths each year are attributed to cigarette smoking, making it the leading preventable cause of death in the U.S. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease. Environmental tobacco smoke has been shown to increase the risk for heart disease and lung cancer among nonsmokers. Careless smoking is the leading cause of fatal fires in the United States.
Definition	Percent of persons age 12 and over reporting smoking a cigarette on one or more days within the past 30 days
Data Source	National Survey on Drug Use and Health (NSDUH), Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services (DHHS)
Frequency	Annual
Geographic Levels	National and State
Demographic Categories	Age
Strengths	NSDUH is the only national source that currently provides prevalence of use estimates for both adolescents and adults for every state.
Limitations	This measure does not convey the lifetime or current number of cigarettes smoked. State-level estimates for most states are based on relatively small samples. Although augmented by model-based estimation procedures, estimates for specific age groups have relatively low precision (i.e., large confidence intervals). The estimates are provided directly by SAMHSA and raw data that could be used for alternative calculations (e.g., different age categories and/or other demographic subgroups) are not available. The estimates are subject to bias due to self-report and non-response (refusal/no answer).

Indicator RECOMMENDED	Current Use of Cigarettes by High School Students
Justification	More than 400,000 deaths each year are attributed to cigarette smoking, making it the leading preventable cause of death in the U.S. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease. Environmental tobacco smoke has been shown to increase the risk for heart disease and lung cancer among nonsmokers. Careless smoking is the leading cause of fatal fires in the United States. It is also illegal for youth under the age of 18 to purchase tobacco products. Among adults in the U.S. who ever smoked daily, 82% tried their first cigarette prior to age 18.
Definition	Percent of students in grades 9 through 12 reporting smoking a cigarette on one or more days within the past 30 days.
Data Source	Youth Risk Behavior Surveillance System (YRBSS), Centers for Disease Control and Prevention (CDC)
Frequency	Biennial
Geographic Levels	National and State
Demographic Categories	Grade Level, Gender, and Race/Ethnicity
Strengths	YRBSS estimates typically are based on larger samples than the NSDUH, and can be further broken down by grade level, gender, and race/ethnicity. Some states also collect YRBSS data for individual communities or school districts, which can be compared with their state-level data.
Limitations	This measure does not convey the lifetime or current amount of cigarettes smoked. As of 2003, weighted representative samples were only available for 32 states. Not all states participate, and some participating states do not provide representative samples. YRBSS is a school-based survey, so students who have dropped out of school are not represented. It is also subject to bias due to self-report, non-coverage (refusal by selected schools to participate), and non-response (refusal/no answer). Estimates for some demographic subgroups may have relatively low precision (i.e., large confidence intervals).

Indicator RECOMMENDED	Current Use of Cigarettes by Adults Aged 18 and Older
Justification	More than 400,000 deaths each year are attributed to cigarette smoking, making it the leading preventable cause of death in the U.S. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease. Environmental tobacco smoke has been shown to increase the risk for heart disease and lung cancer among nonsmokers. Careless smoking is the leading cause of fatal fires in the United States
Definition	Percent of persons aged 18 and older who report smoking 100 or more cigarettes in their lifetime and also now smoke cigarettes either every day or on "some days."
Data Source	Behavioral Risk Factor Surveillance System (BRFSS), Centers for Disease Control and Prevention (CDC)
Frequency	Biennial
Geographic levels	National and State
Demographic Categories	Age, Gender, and Race/Ethnicity
Strengths	BRFSS provides prevalence estimates of adult use for every state. State-level estimates typically are based on larger samples than the National Survey on Drug Use and Health and may be further broken down by age, gender, and race/ethnicity.
Limitations	This measure does not convey the lifetime or current amount of cigarettes smoked. The BRFSS is a telephone survey subject to potential bias due to self-report, non-coverage (households with out phones) and non-response (refusal/no answer). Estimates for some demographic subgroups may have relatively low precision (i.e., large confidence intervals).

Indicator RECOMMENDED	Current Use of Smokeless Tobacco by High School Students
Justification	Approximately 75% of oral cavity and pharyngeal cancers are attributed to the use of smoked and smokeless tobacco. Use of smokeless tobacco also causes gum recession and an increased risk of heart disease and stroke.
Definition	Percent of students in grades 9 through 12 reporting use of "chewing tobacco, snuff, or dip" on one or more days within the past 30 days
Data Source	Youth Risk Behavior Surveillance System (YRBSS), Centers for Disease Control and Prevention (CDC)
Frequency	Biennial
Geographic Levels	National and State
Demographic Categories	Grade Level, Gender, and Race/Ethnicity
Strengths	YRBSS is the only national source that currently provides state-level prevalence estimates on current use of smokeless tobacco among youth. YRBSS estimates typically are based on larger samples than the National Survey of Drug Use and Health, and can be further broken down by grade level, gender, and race/ethnicity. Some states also collect YRBSS data for individual communities or school districts, which can be compared with their state-level data.
Limitations	This measure does not convey the lifetime or current amount of chewing tobacco used. As of 2003, weighted representative samples were only available for 32 states. Not all states participate, and some participating states do not provide representative samples. YRBSS is a school-based survey, so students who have dropped out of school are not represented. It is also subject to bias due to self-report, non-coverage (refusal by selected schools to participate), and non-response (refusal/no answer). Estimates for some demographic subgroups may have relatively low precision (i.e., large confidence intervals).

Indicator RECOMMENDED	Current Daily Use of Cigarettes Among Adults
Justification	More than 400,000 deaths each year are attributed to cigarette smoking, making it the leading preventable cause of death in the U.S. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease. Environmental tobacco smoke has been shown to increase the risk for heart disease and lung cancer among nonsmokers. Careless smoking is the leading cause of fatal fires in the United States. Daily smoking is indicative of relatively high levels of exposure to risks for all documented adverse health effects caused by smoking. Daily smokers are also more likely to be addicted to nicotine.
Definition	Percent of adults aged 18 and older who report smoking 100 or more cigarettes in their lifetime and also now smoke cigarettes every day.
Data Source	Behavioral Risk Factor Surveillance System (BRFSS), Centers for Disease Control and Prevention (CDC)
Frequency	Annual
Geographic Levels	National and State
Demographic Categories	Age, Gender, and Race/Ethnicity
Strengths	BRFSS is the only national survey that currently provides state-level estimates on the prevalence of daily smoking of cigarettes among adults. BRFSS provides prevalence estimates of adult use for every state. State-level estimates typically are based on larger samples than the National Survey of Drug Use and Health and may be further broken down by age, gender, and race/ethnicity.
Limitations	BRFSS is a telephone survey subject to potential bias due to self-report, non-coverage (households with out phones) and non-response (refusal/no answer). Estimates for some demographic subgroups may have relatively low precision (i.e., large confidence intervals).

Indicator RECOMMENDED	Current Daily Use of Cigarettes Among Adolescents
Justification	More than 400,000 deaths each year are attributed to cigarette smoking, making it the leading preventable cause of death in the U.S. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease. Environmental tobacco smoke has been shown to increase the risk for heart disease and lung cancer among nonsmokers. Careless smoking is the leading cause of fatal fires in the United States. Daily smokers are more likely to become addicted to nicotine. It is illegal for youth under the age of 18 to purchase tobacco products.
Definition	Percent of students in grades 9 through 12 who report smoking cigarettes on 20 days or more within the past 30 days
Data Source	Youth Risk Behavior Surveillance System (YRBSS), Centers for Disease Control and Prevention (CDC)
Frequency	Biennial
Geographic Levels	National and State
Demographic Categories	Grade Level, Gender, and Race/Ethnicity
Strengths	YRBSS is the only national survey that currently provides state-level estimates on the prevalence of daily smoking of cigarettes among adolescents. YRBSS estimates typically are based on larger samples than the National Survey of Drug Use and Health, and can be further broken down by grade level, gender, and race/ethnicity. Some states also collect YRBSS data for individual communities or school districts, which can be compared with their state-level data.
Limitations	As of 2003, weighted representative samples were only available for 32 states. Not all states participate, and some participating states do not provide representative samples. YRBSS is a school-based survey, so students who have dropped out of school are not represented. It is also subject to bias due to self-report, non-coverage (refusal by selected schools to participate), and non-response (refusal/no answer). Estimates for some demographic subgroups may have relatively low precision (i.e., large confidence intervals).

| Indicator
RECOMMENDED	Early Initiation of Cigarette Use
Justification	More than 400,000 deaths each year are attributed to cigarette smoking, making it the leading preventable cause of death in the U.S. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease. Initiation of cigarette use at young ages, especially in pre-adolescence, has been linked with regular use of cigarettes in adolescence and adulthood. Among adults in the U.S. who ever smoked daily, 82% tried their first cigarette prior to age 18. It is also illegal for youth under the age of 18 to purchase tobacco products
Definition	Percent of students in grades 9 through 12 reporting that they smoked a whole cigarette for the first time before age 13
Data Source	Youth Risk Behavior Surveillance System (YRBSS), Centers for Disease Control and Prevention (CDC)
Frequency	Biennial
Geographic Levels	National and State
Demographic Categories	Grade Level, Gender, and Race/Ethnicity
Strengths	This measure may be defined for all respondents, unlike average age of first use, which can only be defined for users. YRBSS is the only national source that currently provides state-level prevalence estimates on early initiation of cigarette use. YRBSS estimates typically are based on larger samples than the National Survey of Drug Use and Health, and can be further broken down by grade level, gender, and race/ethnicity. Some states also collect YRBSS data for individual communities or school districts, which can be compared with their state-level data.
Limitations	Cut-point of 13 years may not be sensitive to changes in average age of first use across the age continuum. As of 2003, weighted representative samples were only available for 32 states. Not all states participate, and some participating states do not provide representative samples. YRBSS is a school-based survey, so students who have dropped out of school are not represented. It is also subject to bias due to self-report, non-coverage (refusal by selected schools to participate), and non-response (refusal/no answer). Estimates for some demographic subgroups may have relatively low precision (i.e., large confidence intervals).

Indicator RECOMMENDED	Packs of Cigarettes Taxed per Capita
Justification	More than 400,000 deaths each year are attributed to cigarette smoking, making it the leading preventable cause of death in the U.S. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease. Environmental tobacco smoke has been shown to increase the risk for heart disease and lung cancer among nonsmokers. Careless smoking is the leading cause of fatal fires in the United States.
Definition	Number of packs of cigarettes taxed at the wholesale level by each state per capita age 18 and older
Data Source	Data on wholesale distribution of cigarettes by states provided by the University of California at San Diego Social Sciences and Humanities Library as compiled from The Tax Burden on Tobacco annual volume for 2002 (numerator) and population estimates from the U.S. Bureau of the Census (denominator)
Frequency	Annual
Geographic Levels	National and State
Demographic Categories	None
Strengths	This indicator is consistently defined and readily available from archival data for all states and for many years. It provides an independent measure of a population's consumption of cigarettes.
Limitations	Average consumption levels may not be sensitive in identifying areas with a high prevalence of heavy use where there are also high rates of abstinence. Estimates may be inflated due to consumption by non-residents (e.g., tourists and other visitors). Untaxed cigarettes (e.g., products that are smuggled or homemade) are not captured in this indicator.